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A.D. 1887. Nov. 30. N° 16,491.
BUDDICON'S Complete Specification.

11 SHEET.

Fig. 1.

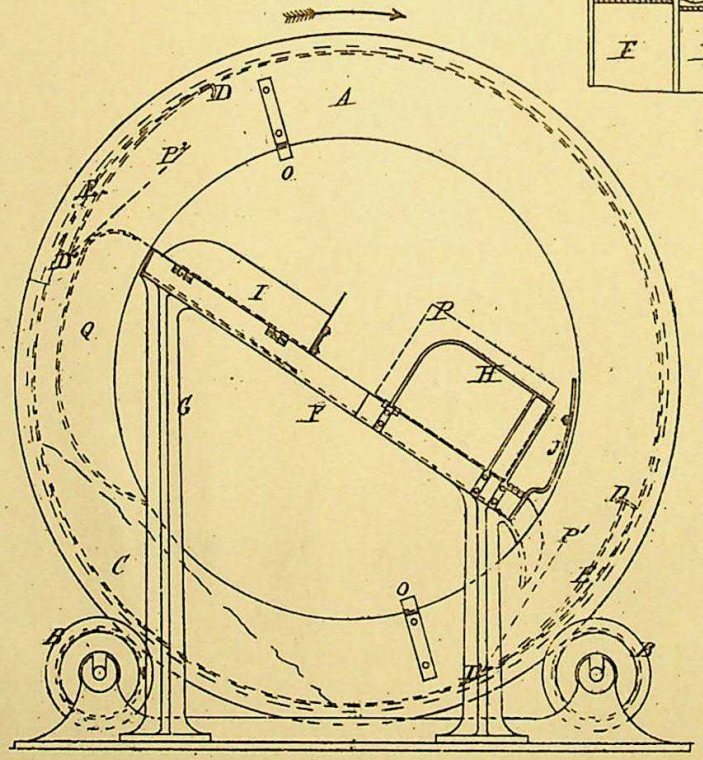


Fig. 3.

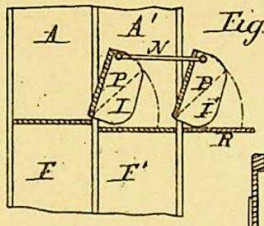
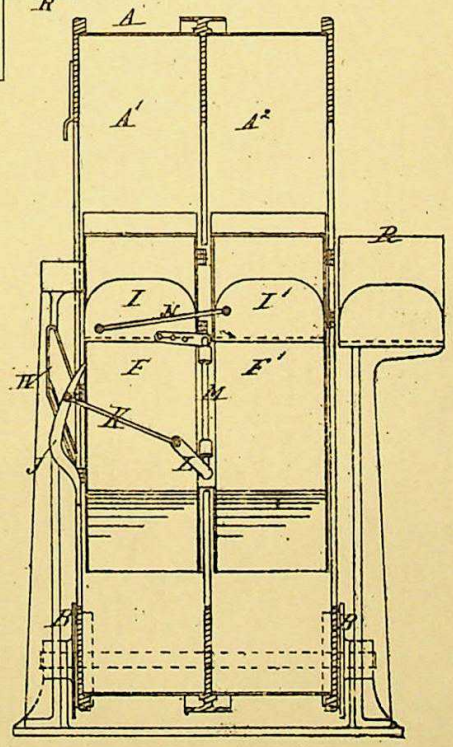


Fig. 2.



Sheet Metal and Wire

British No. 16,491
Nov. 30, 1887

51, Grinding & Polishing.
Metal,
Sheet Metal & Wire.

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Date of Application, 30th Nov., 1887
Complete Left, 31st Jan., 1888
Complete Accepted, 2nd Mar., 1888

A.D. 1887, *30th* NOVEMBER. N° 16,491. D

PROVISIONAL SPECIFICATION.

Improved Apparatus for Dipping or Cleansing Tin and Terne Plates.

I, HARRY WILLIAM BUDDICOM of Pen y pound, Abergavenny, Engineer, do hereby declare the nature of this invention to be as follows :—

My invention has reference to an improved apparatus for dipping tin and terne plates, that is to say, for cleansing such plates by means of bran or other suitable granular material after they are removed from an oil bath.

For this purpose, I construct an open drum revolving on a horizontal axis and having two or more inner annular troughs or passages, situated side by side in which is placed the bran or other cleansing material, which, as the troughs revolve slowly in one direction, practically remain near the bottom thereof.

On the bottom surface of each trough are a series of projections or catches against which the plates to be cleansed are placed so that as the drum revolves, the catches carry the plates round with them and thus cause them to pass underneath the bran which is thus made to cleanse the surface of the plate presented to it. Within the centre part of the drum is a fixed incline or series of inclines, the upper end of which is presented to an upper part of the first trough while the lower end is presented to a lower part of the second one, and so on, if there are more than two. The upper end of the incline has a curved guide entering the first trough and so formed that as a plate is raised up after passing through the bran as described, it is delivered by the guide on to the incline with the surface which has been acted upon undermost. The plate then slides down the incline and on to a flap or trap door formed at its lower end, which is held closed by a spring or weight until it is pressed down by a stud on the revolving drum, so as to deliver the plate into the second trough. Here it is again seized by a catch and carried through the bran, which consequently acts upon the other side thereof.

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DIVISION XXVII.

The plate being again carried up it is either delivered on to a second incline leading to a third trough, if there are more than two, or if there are only two, it is raised to a stationary bar in the second trough on which it falls and which delivers it on to a shoot on which it passes out of the machine.

The shoot is divided so as to allow the arms of the drum to pass, and the falling plate is arrested by a catch until the arm has just passed, so that the plate cannot be caught by the arm.

Dated this 30th day of November 1887.

ABEL & IMRAY,
Agents for the Applicant.

COMPLETE SPECIFICATION.

Improved Apparatus for Dipping or Cleansing Tin and Terne Plates.

I, HARRY WILLIAM BUDDICOM of Pen-y-pound Abergavenny, Engineer do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

My invention has reference to an improved construction of apparatus for dipping or cleansing tin and terne plates by means of bran or other suitable granular material after they are removed from an oil bath. According to my invention the plates are introduced into vertically arranged annular revolving troughs containing bran or other cleansing material, which, as the troughs revolve, is thereby caused to tumble over and over, so as practically to remain in one and the same position on the rising side of the trough, so that as the plates are placed between catches on the descending side of the trough, they are in travelling round with the same, carried through the stationary layer of bran, and become cleansed by the rubbing action of the bran to which they are thus subjected. The plates may be so placed in the trough that they pass about midway through the thickness of the layer of bran, so as to be acted upon more or less equally on both sides at the same time, whereby the cleansing operation may be more or less perfectly carried out by merely continuing the rotation of the trough any required number of times with the plate or plates in the same position after which they are removed, but by preference I provide arrangements whereby the plate after having passed through the bran, has its position reversed either in the same trough or in a second one so that the side which was undermost and was therefore less subjected to the rubbing action than the other side is then uppermost as it passes through.

In order to render the action of the apparatus a continuous one, I prefer to arrange two or more such annular troughs side by side and to cause the plates, after they have been passed through the bran in the first trough, to be automatically turned over and at the same time conveyed into the next trough where they are again subjected to the same operation, and so on, if there are more than two troughs, the plates being automatically delivered out of the last trough.

On the accompanying drawing is shewn the arrangement of the before described apparatus which I prefer to employ ; Fig. 1 shews a front elevation. Fig. 2 a cross section, and Fig. 3 a part section shewing the hinged reversing flaps in their raised position. A is a drum containing two annular troughs A^1 A^2, the drum being supported upon rollers B and rotated in the direction of the arrow by any suitable means. Each trough contains a body of bran or other suitable granular material C, which as the troughs slowly rotate falls over and over so as to permanently assume about the position shewn. In the bottoms of the troughs are fixed projecting pins or catches D D for holding the plates to be acted upon, bars E being by preference arranged between the catches, raised up from the bottom of the trough so that the plate in resting thereon has its underside more or less exposed to the rubbing action of the bran, as it is carried through the same. Within the troughs A^1 A^2 are arranged two stationary inclines F F^1, supported by standards G. The incline F has firstly at its lower end a guard H for the reception of the plates to be acted upon hinged to its outer side and secondly at its upper end a flap I hinged to its inner side. The guard H carries a cam shaped arm J connected by a rod K to a lever L on a spindle M carried in brackets on the middle flange of the drum A and, fixed to an arm on the flap I. This flap is connected by a rod N with a similar hinged flap I^1 on the incline F^1.

The action is as follows :—

The drum A is provided with two tappets O O which, as it rotates bear against the arm J and thereby turn the guard H inwards from the position shewn, so that a tin plate P which had been placed upon it by the workman is thrown down on to the incline F, from which it slides down and falls from the curved end thereof into the trough A^1, between the catches D D, as indicated by the dotted position at P^1.

In this position the plate is carried through the bran at C as described, and in rising up beyond this falls against a curved guard Q fixed to the upper end of the incline F so as eventually to fall on to the latter as indicated at P^2 where it slides down on to the flap I. By the time the plate has arrived in this position, the second tappet O will have arrived at the arm J and in acting upon this, will firstly cause another plate to be delivered from H on to F and secondly will cause the two flaps I I^1 to be raised into the vertical position shewn at Fig. 3, whereby the plate P^2 lying on I will be turned over on to the slide F^1 underneath the flap I^1, and will slide down this into the trough A^2, in which it will be received by catches D and will then be carried up through the layer of bran contained in this trough. On passing up the plate will again be led by a guide Q on to the flap I^1, of incline F^1, and this being then tilted up simultaneously with I as before described, the plate will be delivered thereby on to the table R, whence it is removed by the attendant.

It will be seen that as the plate P falls from F and F^1 into troughs A^1 and A^2 it is turned over, and that it is also turned over when it is delivered from trough A^1 on to flap I, which again turns it over as it delivers the plate on to the incline F^1. By this means the one side of the plate is presented uppermost as it is carried through the bran in trough A^1 and the other side is uppermost when it is carried through the bran in A^2, so that both sides are equally acted upon before the plate passes out of the machine. The plates still require dusting after removal from this apparatus.

The guard H and flaps I I^1 are brought back into their original positions after having been tilted, either by balance weights or springs.

It will be evident that there might be a series of three or more troughs instead of two, or that only one might be employed, in which case the lower part of the slide would be so arranged as to deliver the plate on to the trough without being turned over, in order that after being passed through the bran with one side uppermost and

being then turned over on to the slide F with its other side uppermost it may be delivered on to the trough and be carried through the bran in this position.

On being delivered on to the slide after passing the second time through the bran, the plate would in this case be removed by hand.

Having now particularly described and ascertained the nature of this invention and in what manner the same is to be performed I declare that what I claim is :—

1. Apparatus for dipping or cleansing tin and terne plates, consisting of a vertically revolving annular trough containing a layer of bran or other granular material, and having catches or appliances whereby the plates to be cleaned are carried round through the layer of bran which in falling over always remains in about the same position in the trough substantially as herein described.

2. Apparatus for dipping or cleansing tin and terne plates consisting of a vertically revolving annular trough containing a layer of bran or other granular material and having catches or appliances whereby the plates to be cleaned are carried round through the bran, which remains in about the same position, and a stationary inclined shoot within the trough on to which the plate is delivered in an inverted position after it has passed through the bran and from which it slides down into the trough again in order to be passed through the bran in the inverted position, substanttially as herein described.

3. Apparatus for dipping or cleansing tin and terne plates consisting of two or more vertically revolving annular troughs arranged side by side each containing a layer of bran or other granular material and having catches or appliances whereby the plates to be cleansed are carried round through the bran which remains in about the same position and stationary inclined shoots within each trough having each a hinged flap at the upper end for receiving the plates after passing through the bran and a cam lever connected to the flaps and acted upon by tappets on the revolving trough so as to raise the flaps after the plates have been deposited thereon, and cause these to be turned over and delivered on to the shoot in the next trough substantially as herein described.

Dated this 31st day of January 1888.

ABEL & IMRAY,
Agents for the Applicant.

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